

REMARKS

This application has been reviewed in light of the Office Action dated September 30, 2003. Claims 1-51 remain in this application. Claims 1, 10, 20, 21, 28, 37 and 47-49, the independent claims, and Claim 40 have been amended to define more clearly what Applicants regard as their invention. Favorable reconsideration is requested.

Applicants note with appreciation the indication that Claims 6-9, 13-16, 33-36 and 40-43 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. These claims have not been so rewritten because, for the reasons given below, their base claim is believed to be allowable.

Claims 1-5, 10-12, 17-32, 37-39 and 44-51 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent 6,229,926 (Chui et al.) in view of U.S. Patent 5,600,373 (Chui et al.).

The general nature of the aspects of the invention to which the various independent claims are directed, and the prior art, have been discussed adequately in previous papers, and it is not believed to be necessary to repeat that discussion in detail. accordingly, Applicants will address only those points which they believe require comment.

Chui '926 relates generally to the processing and storage of images in digital cameras and other devices, and particularly to a system and method for applying a wavelet or wavelet-like transform to a picture using a transform tile size that is much smaller than the picture and using much less working memory than would be required if the transform were applied to the entire picture at once (col. 1, lines 8-15). The *Chui '926* apparatus tiles a captured image, processing the tiles in a predefined order (col. 2, lines 16-17). After each

tile of the raw image has been transformed into wavelet coefficients, the resulting array of wavelet coefficients are compressed and encoded (co. 5, lines 22-24). All the tiles in the image are processed, in raster-scan order by applying a wavelet-like decomposition transform to them in both the horizontal and vertical directions, then quantizing the resultant transform coefficients, and finally by encoding the quantized transform coefficients (col. 9, lines 34-38). Finally, after all the tiles in the image have been processed, an image file containing all the encoded tiles is stored in non-volatile memory (col. 9, lines 41-43).

Among other important features of recited in Claim 1 are “(a) *...each block having a specked block size in number of coefficients, in a first and second dimension ...* (b) *each tile having firstly, substantially a minimum number of pixels required to produce the number of coefficients in the first dimension of said block at said predetermined level of DWT decomposition, and secondly, less than a minimum number of pixels required to produce the number of coefficients in the second dimension of said block at said predetermined level of DWT decomposition... (d) repeatinguntil the specified number of coefficients in the second dimension of said block has been generated...*” (all emphases added).

Feature (a) relates to the fact that the encoding is performed on a block basis, where the blocks are of a specified size that is expressed as *a number of coefficients, in a first and second dimension*. Feature (b) relates to the fact that the tiles upon which successive DWT operations are performed *have a minimum number of pixels required to produce the number of coefficients in the first dimension of said block but less than a minimum number of pixels required to produce the number of coefficients in the second*

dimension of said block. In other words the encoding processing is performed at a block level, but the blocks are formed using DWT processing of tiles which conform to the block size in one dimension, but are smaller than the conforming size in the other dimension. This requires that the DWT processing be performed on a number of tiles for each block, as recited by feature (d).

Chiu '926 neither discloses nor suggests performing encoding on a block basis using coefficient blocks of predetermined size, where the blocks are formed using DWT processing of tiles whose size conforms to the blocks in one dimension but are smaller than a conforming size in the other dimension.

The Office Action concedes that *Chui '926* fails to provide any explicit teaching of the features recited in step (e) of Claim 1 (formerly step (d) prior to the present amendment), and cites *Chui '373* for that feature.

Chui '373 discusses “calculating a numerical value based upon the sum of the coefficients in the LH, HL and HH components of the decomposed image” (col. 26, lines 54-55). However, the purpose of this calculation is to determine a compression ratio in order to determine whether “an additional pass through the decomposition process [needs to be] performed” (col. 26, line 41-50).

Chui '373 does not remedy the deficiency of *Chiu '926* as prior art against Claim 1, noted above, since *Chiu '373* neither discloses nor suggests performing encoding on a block basis using coefficient blocks of predetermined size, where the blocks are formed using DWT processing of tiles whose size conforms to the blocks in one dimension but are smaller than a conforming size in the other dimension. Even if these two patents

are combined, the result would not meet the terms of Claim 1, and that claim is believed to be clearly allowable over any permissible combination (if any exists) of those two patents.

Each of the other independent claims recites features similar to those discussed above with respect to Claim 1, and therefore all the independent claims are also believed to be patentable for the reasons discussed above.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

This Amendment After Final Action is believed clearly to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Leonard P. Diana", is written over a horizontal line.

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